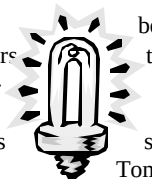
The Power of Invention

During the past century, civilization has gone through a technological transformation. It is hard to imagine that only 100 years ago, most Americans did not have running water, electricity, or phones in their homes and rode horses to get around. Today things are quite different. We now live in a world with cellular phones, air conditioning, plastics, radar, jet airplanes, automatic teller machines, antibiotics, lasers, movies, television, space travel, computers, and the Internet.

This century has seen an explosion in the number of technologies that humans have invented and it would be difficult to determine which technology has had the most impact. Each technology has its advantages and disadvantages but all have changed the work place.

At the beginning of this century careers such as aeronautical engineers, film editors, computer programmers, laser technicians, and aircraft mechanics did not exist. These are only a small number of occupations that have been created in the 1900s. In addition, almost all occupations have changed dramatically during the past 100 years due to changing technology.

Fifty years ago a mechanic's garage would probably have had shelves lined with automotive manuals. Back then all a mechanic needed was the right book and a good ear to make any car run smoothly. Today the manuals are gone, replaced by Pentium-based computers and CD-ROMs. The fix-it-by-sound method has disappeared, too; today's cars are controlled by noiseless computer chips. To keep up with changes, some mechanics spend several nights a week in continuing education courses.



The decades ahead will bring changes just as dramatic. However, trying to foresee what work will look like decades from now is next to impossible since the biggest changes will probably come from technological innovations we can only dream about.

Demographers can tell us much about what the work force will look like ten to fifteen years from now. The Bureau of Labor Statistics predicts that health care and computer-related work will grow, while bookkeepers, typists, copy machine operators, and anyone whose job can be performed by automation will decline. In addition, with longer life spans and the cash-strapped Social Security fund, working into old age will become more common. The workplace, like the country, will be home to many more immigrants. And if you work in a factory today, you—or your children—are more likely to work in an office tomorrow.

In the future, says Robert Reich, the former Secretary of Labor, we won't be able to classify workers under the blue-collar/white-collar division of the past. We also won't see so many Americans with only a high school education earning comfortable middle-class wages. Despite overseas competition, there are still millions of workers earning more than $35,000 a year on an assembly line. Those jobs will dwindle in year to come. "Jobs bending metal or doing the machining in a factory will become fewer and fewer," Reich says.

Tomorrow's middle class will be made up largely of "technicians," he says, whose jobs will usually require training in addition to a high school diploma. These "technicians" will include everyone from inventory managers to paralegals to high-tech auto mechanics. "Almost all 'technician' jobs involve computers," Reich says. "You'll have to have more education than the previous middle class."

The change has started at assembly plants, print shops, and cabinetmaking plants, where many jobs now require more than on-the-job training but less than a college degree. Community college and other programs now train many of these workers.

Change will also occur for highly educated, high earning professionals. Freelance talent-for-hire will become more the norm than the exception. A research project by the Human Resource Institute found that only 61 percent (down from 84 percent today) of large companies expected to have more than 75 percent of their work force consist of full-time, regular employees a decade from now. While that may sound scary, Wharton professor Mike Useem says that mid-career executives he works with are already becoming comfortable with the notion of bouncing between employers and assignments rather than climbing the ladder at a single employer.

According to Watts Wacker, a futurist with SRI International, the talent-for-hire trend of the next century is a return to the guild system of the Middle Ages, in which tradesmen traveled from town to town practicing their craft for a variety of clients. Many knowledge workers will telecommute to their various offices.

Even without telecommuting, if you believe one school of thought, we won't be seeing our colleagues much in tomorrow's workplace. So says Jeremy Rifkin, author of the bestseller *The End of Work*, whose book is a discussion of how technology will take the place of many mass production laborers. While it sounds like a chilling scenario with lots of painful unemployment, Rifkin argues it will free us up for more cultural activities and nonprofit work. "There's no reason we shouldn't move to a 30-hour work week now and a 25-hour work week ten years from now, with higher pay and benefits," Rifkin says.

However, economists disagree. They say today's low unemployment rate and wage pressure show we face a shortage, not a surplus, of skilled labor. But Rifkin has sold more than 100,000 books and keeps a full speaking schedule, suggesting that there will always be ample work for futurologists.

The future is really impossible to predict since unforeseen inventions will more than likely spring up. But whatever you think the future will be like, realize that this century has produced many changes in the work place. The next 100 years will bring even more change, which can be scary. However, a good way to handle the pressure of change is to be prepared. In this case, it means getting as much education as possible.

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